

AMENDMENTS TO THE DRAWINGS:

A replacement drawing is submitted for Figures 2 and 5.

REMARKS

The application has been amended to place the application in condition for allowance at the time of the next Official Action.

As to the specification objection, applicant notes that MPEP §2011 provides that a later-filed application must contain reference to the prior-filed application in the first sentence of the specification or an Application Data Sheet.

Applicant submits herewith a copy of the Application Data Sheet filed December 7, 2005 and postcard receipt evidencing the same that shows that applicant provided reference to the prior-filed application in the Application Data Sheet. As the priority claim can either be in the specification or in the Application Data Sheet and as applicant has provided evidence that the priority claim is in the Application Data Sheet filed with the present application, the specification objection should be withdrawn.

As to the drawing objection, a replacement drawing is submitted for Figure 5 labeling the figure as "PRIOR ART" as suggested in the Official Action.

In addition, a replacement drawing is submitted for Figure 2 that corrects the measurements of thin plate 20 consistent with the disclosure on page 15, lines 8-11. The above-noted changes are the only changes and are believed not to introduce new matter.

Claims 1-7 were previously pending in the application. New claims 8-12 are added. Therefore, claims 1-12 are presented for consideration.

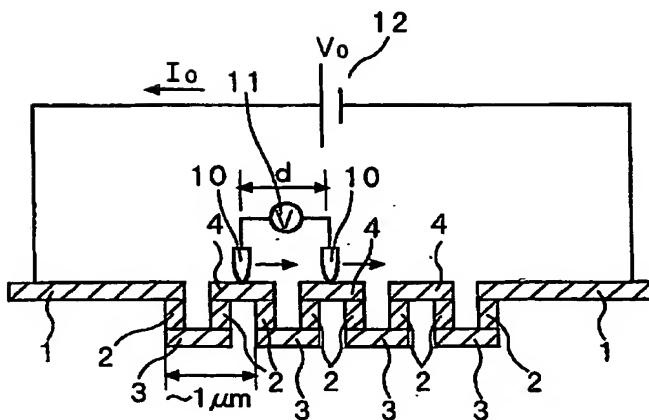
Applicant notes with appreciation the indication that claims 2 and 5 are allowable. In reliance thereon, claims 2 and 5 are rewritten in independent form.

Claims 1 and 3 were rejected as unpatentable over applicant's disclosed prior art Figure 5 in view of WATANABE et al. JP 2002-214112 and further in view of BOTTCHER et al. US Publication No. 2004/0100293. That rejection is respectfully traversed.

Claim 1 recites two probes arranged at a spacing determined by a distance between exposed portions of a pattern. Claim 1 also provides a scanning section provided to cause the two probes to scan over a surface of a wafer containing a chip while keeping unchanged the spacing between the two probes.

By way of example, as seen in Figure 1 of the present application, reproduced below, two probes 10 are arranged at a spacing d determined by a distance between exposed portions 4 of the pattern.

FIG. 1



A scan section 30 (of Figure 3) causes the two probes 10 to scan over a surface of a wafer containing the chip while keeping unchanged the spacing d between the two probes.

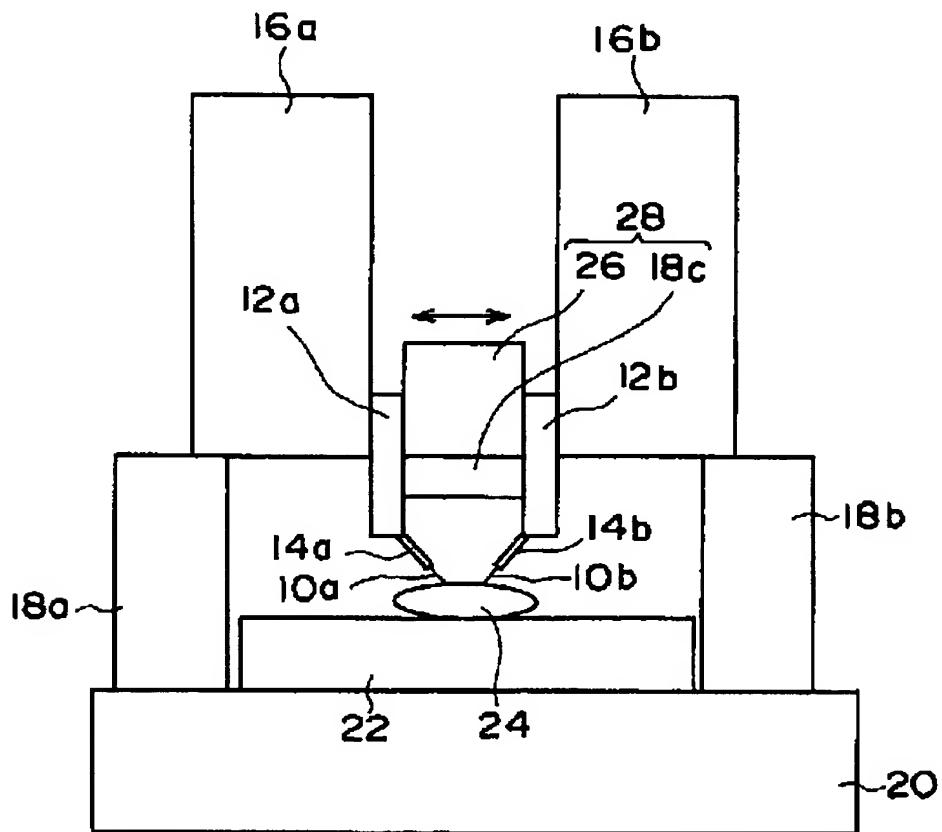
The WATANABE reference is offered for the disclosure of two probes arranged at a spacing determined by a distance between exposed portions of a pattern. Although WATANABE is not specifically offered for the disclosure of keeping unchanged the spacing between two probes, nevertheless, WATANABE is the only reference that teaches two probes and the below remarks are based on WATANABE presumably being relied upon for this feature.

In any event, WATANABE neither discloses that for which it is offered nor that which is recited.

Figure 1 of WATANABE, reproduced below, shows two probes 10 for detecting a sample 24. WATANABE does not disclose

two probes arranged at a spacing determined by a distance between exposed portions of a pattern.

Rather, the probes of WATANABE are used to measure a single item 24, wherein the entire item 24 is exposed. Thus, the probes of WATANABE are not spaced a distance between exposed portions of a pattern.



Moreover, the distance between the probes in WATANABE changes. Paragraphs [0020] to [0023] of WATANABE disclose that in working with two probes a problem exists in that the probes will contact each other. To help prevent against this, WATANABE uses probes that have as small a diameter as possible.

Nevertheless, paragraph [0034] of WATANABE discloses that during operation of the device of WATANABE, an excitation device 28 vibrates in the directions of the arrow shown in Figure 1. A spring 18c connected to probe holders 12a, 12b limits the movement of the probes to about 1-3nm. Thus, the spacing between probes 10a and 10b changes.

As WATANABE neither discloses two probes arranged at a spacing determined by a distance between exposed portions of a pattern nor that the spacing between two probes is unchanged, the above-noted features would not have been obvious in view of WATANABE.

In addition, based on the teachings of the BOTTCHER reference, it would not have been obvious to one of ordinary skill in the art to use this reference in combination with applicant's disclosed prior art and WATANABE to render obvious claim 1.

Figure 7 of BOTTCHER shows a plurality of voltmeters 705, 706, 707 arranged between probe pads. Each of the voltmeters 705, 706, 707 is designated between a pair of probe pads. That is, BOTTCHER uses one voltmeter per pair of pads. BOTTCHER does not disclose scanning the voltmeter along plural pads. Rather, as set forth above, BOTTCHER uses plural voltmeters to measure his potential differences. See, for example, paragraph [0060] of BOTTCHER wherein several bumps are tested simultaneously by plural voltmeters.

A preferred embodiment of the present invention includes pairs of 10,000 through-holes, which would require 5,000 or more voltmeters. Based on the disclosure of plural voltmeters in BOTTCHER to measure between plural probe pads, one of ordinary skill in the art would not have found it obvious to combine BOTTCHER with applicant's disclosed prior art to render obvious two probes that scan over a surface of a wafer while keeping the space between probes as recited.

Moreover, although paragraph [0053] of WATANABE discloses two probes, nevertheless the spacing between the probes is changed according to an object to be measured. In addition, WATANABE electrically measures only one microscopic substance, not a chain pattern as recited. On the other hand, BOTTCHER measures a voltage difference among a plurality of elements at a time and discloses a technique for measuring the voltage difference between these plural elements.

In contrast, as recited in claim 1, a chain patterned is probed to, for example, determine a failure point of the chain pattern, while detecting a voltage between the probes arranged according to a distance between exposed portions of the chain pattern. The proposed combination of references does not provide guidance as to how to determine a failure point of the chain pattern.

In view of the above, it is apparent that the references do not disclose that for which they are offered and,

in any event, one of ordinary skill in the art would not have been motivated to combine the references in the manner suggested, in the first instance. Accordingly, reconsideration and withdrawal of the rejection as to claim 1 are respectfully requested.

Claims 4 and 6-7 were rejected as unpatentable over applicant's disclosed prior art Figure 5 in view of WATANABE and BOTTCHER and further in view of ARNOLD et al. US Publication No. 2003/0062915. That rejection is respectfully traversed.

ARNOLD is only cited for the disclosure of features related to the shape of the probe. ARNOLD discloses neither two probes arranged at a spacing determined by a distance between exposed portions of a pattern nor that a spacing between the two probes is unchanged as recited in claim 1. As set forth above, applicant's disclosed prior art in view of WATANABE and BOTTCHER does not disclose that which is recited in claim 1. Since claims 4, 6 and 7 depend from claim 1 and further define the invention, claims 4, 6 and 7 are believed patentable at least for depending from an allowable independent claim.

New claims 8-12 depend from allowable claim 2 and further define the invention and are believed patentable at least for depending from an allowable independent claim. The new claims find support in original claims 3-7.

In view of the present amendment and foregoing remarks, it is believed that the present application has been placed in

condition for allowance. Reconsideration and allowance are respectfully requested.

The Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 25-0120 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17.

Respectfully submitted,

YOUNG & THOMPSON



Liam McDowell
Liam McDowell, Reg. No. 44,231
745 South 23rd Street
Arlington, VA 22202
Telephone (703) 521-2297
Telefax (703) 685-0573
(703) 979-4709

LM/lk

APPENDIX:

The Appendix includes the following items:

- a replacement Abstract of the Disclosure
- copy of the Application Data Sheet filed December 7, 2005 and postcard receipt evidencing the same
- Replacement Sheets for Figures 2 and 5 of the drawings